



**WESTERN<sup>®</sup>  
MULTIPLEX  
CORPORATION**

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300 Harbor Boulevard  
Belmont, California 94002  
Tel. (415) 592-8832  
Fax (415) 592-4249  
Telex via RCA 295114 WESMUX

March 31, 1994

RM-8435

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**APR 4 1994**

**FCC - MAIL ROOM**

Office of the Secretary  
Federal Communications Commission  
1919 M Street, N.W., Room 222  
Washington, D.C. 20554

Dear Mr. Secretary:

Please find enclosed an original and four copies of Western Multiplex Corporations Reply Comments to Statements in Support of and in Opposition to our Petition for Rule Making (RM-8435).

Sincerely

Michael Mulcay  
Vice President

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Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, D.C. 20554

In the Matter of

Amendment of Part 15 of the Rules  
with regard to the operation of  
spread spectrum transmitters  
with directional antennas

)  
) RM-8435  
)  
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To: The Commission

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APR 4 1991

WESTERN MULTIPLEX CORPORATION  
REPLY TO COMMENTS IN SUPPORT OF  
THE PETITION FOR RULE MAKING

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Western Multiplex Corporation (WMC), pursuant to Sections 1.4 and 1.405 of the Commission's Rules, hereby submits this reply to the Comments filed in Support of the WMC Petition for Rule Making.

I. Introduction

On February 16, 1994 the Commission issued a Public Notice inviting comments in the above-captioned rulemaking (Report 2000, #41771). In the following thirty days, WMC received 32 statements in support of the petition and no statements in opposition. Subsequent to the thirty day comment period WMC received three statements in opposition to its Petition. Due to the lateness of the comments in opposition, WMC will reply separately to these comments.

In our petition we stated that: "The public need for these important types of systems [using directional antennas and transmitter output powers of up to 1W] were unknown and therefore not considered by industry or the Commission in the proceedings of Docket No. 89-354, adopted on June 14, 1990," that: "A widespread public need for these systems is clearly demonstrated by the sale and use of these products throughout the United States" and that: "If the petition is not granted, products that are clearly being used to meet a wide variety of public convenience and safety needs will be forced off the market."

WMC believes that the statements in support of our Petition for Rule Making, from users, user groups and manufacturers, demonstrates that there is now a public need for systems using directional antennas with transmitter output powers of up to 1W and that the forced withdrawal of these products from the market would be detrimental to the public interest.

## II. Universal Support

The Utilities Telecommunications Council (UTC), representing approximately 2,000 members from small electric cooperatives and water districts to large electric-gas-water utilities serving millions of customers, states in Page 3 that: "Spread spectrum point-to-point systems developed pursuant to the former provisions of Part 15 have proven very beneficial to UTC's member companies, with no discernible adverse effects. UTC's member companies report that they rely on this equipment for many diverse applications:

- \* Low density spurs off of microwave or fiber optic backbone systems to serve remote field offices and service centers.
- \* Extensions of local area networks (LANS) among corporate office buildings.
- \* Transmission of supervisory control and data acquisition (SCADA) circuits and seismic monitoring equipment.
- \* To link VHF land mobile base stations with dispatch control points.

- \* To link 800 MHz trunked repeater sites, used for voice and data transmissions, to wide area controllers.
- \* Remote control of a mobile stacker reclaimer in a power plant control yard.
- \* Temporary emergency restoration links to be used until permanent links can be installed or repaired.

Panhandle Eastern Corporation (Panhandle), owner and operator of one of the nation's largest natural gas transmission networks states (on page 3): "By lifting the antenna gain restrictions as requested by WMC, the Commission will serve a clearly demonstrated need of American business and industry."

The Oregon Department of State Police states: "The availability of equipment to provide nonlicensed spread spectrum point to point communications, with DS1 capacity [and 1W output power with directional antennas], is a valuable resource to public safety."

Burlington Northern Railroad states: "Burlington Northern Railroad believes that there is clearly a widespread public need for these types of systems [1W power output with directional antennas] throughout the United States."

Metricom, Inc. (Metricom) states (in the last paragraph of Attachment 1): "To limit the usefulness of these networks [by imposing unnecessary restrictions on the use of directional antennas] would be to seriously impact the public interest in a wide variety of areas."

Haley, Bader & Potts, on behalf of NewNet Corporation, states in their introduction that: "NewNet has received expressions of public interest in telecommunications network applications which are currently made technically and economically feasible by spread spectrum radios. This interest indicates a public need growing beyond that need already demonstrated by sales of WMC and competitors radio products and by their widespread use in the United States, which are recited in the Petition. The effect of the Petition's proposed changes to antenna gain will be to maintain currently available point-to-point transmission distances and related performance which serve the public interest by:

- \* enabling economical network construction,
- \* encouraging competition,
- \* uniquely enabling applications serving rural and low population density localities, and
- \* causing no known interference...."

**III. Strong Evidence that Spread Spectrum Radios with  
1 Watt Output Power and Directional Antennas can  
Operate without Causing Unacceptable Interference**

There are now thousands of spread spectrum radios operating successfully in the 2400-2483.5 MHz and 5725-5850 MHz bands with output powers of 1 Watt with directional antennas. WMC contends that this represents strong evidence that the combination of spread spectrum modulation and directional antennas provides for very effective use of unlicensed spectrum while satisfying the public need for universal unlicensed wireless transport.

In their statements in support of the WMC petition, nine of the respondents state that they know of no case of harmful interference that has been caused by spread spectrum radios [with 1W output power] using directional antennas and five state that they know of no interference caused by products operating in the 2400-2483.5 MHz or 5725-5850 MHz bands manufactured by WMC.

The Public Service Company of Oklahoma states: "Equipment using directional antennas without the 6 dBW EIRP restriction now operates throughout the system in the State of Oklahoma. There are no cases of harmful interference in the 2400-2483.5 MHz band.

The Oregon Department of State Police state: "We are unaware of any case of harmful interference that has been caused by spread spectrum radios [with 1W output power] using directional antennas in either the 2400-2483.5 MHz or 5725-5850 MHz frequency bands."

Panhandle states (on page 5): " In fact, Panhandle is aware of no specific case of harmful interference having been reported to the Commission due to such operations in either the bands 2400-2483.5 MHz or 5725-5850 MHz, even through such equipment has been widely deployed and operated with outputs higher than [the +6 dBW EIRP that] Section 15.247(b) would allow."

Finally, the UTC stated (on page 4): " UTC's informal survey on this [interference] issue disclosed no instances of interference with this equipment that could be attributed to the output power or gain of the spread spectrum systems themselves."



IV. Conclusions

In the thirty days following the Commission's Public Notice inviting comments on WMC's Petition for Rule Making, 32 statements of support were received from a wide range of interested parties that included users and manufacturers. Not one statement opposing WMC's Petition was received during the comment period (subsequent to the comment period only three statements were received in opposition to WMC's Petition). Therefore, Western Multiplex Corporation urges the Commission to promptly grant the WMC Petition and to either grant WMC's Request for an Immediate Waiver, while the rulemaking is in process, or to extend the present transition rules deadline of June 23, 1994 until such time as the rulemaking process is completed.

Respectfully submitted,

WESTERN MULTIPLEX CORPORATION

By: 

Michael Mulcay  
Vice President

Western Multiplex Corporation  
300 Harbor Boulevard  
Belmont, CA 94002

(415) 592-8832

March 31, 1994

**CERTIFICATE OF SERVICE**

I, Michael Mulcay, Vice President of Western Multiplex Corporation, hereby certify that on this 31st day of March, 1994, a copy of the foregoing Reply To Comments WMC's Petition was served, by U.S. mail, first class postage prepaid, upon the following:

Jeffrey L. Sheldon  
General Counsel  
Utilities Telecommunications Council  
1140 Connecticut Avenue, N.W.  
Suite 1140  
Washington, D.C. 20036

Patrick J. Haddican  
Director of Communications  
C/o: Wayne V. Black  
Keller and Heckman  
1001 G Street, Suite 500 West  
Washington, D.C. 20001

James R. DeRosier Lt.  
Technical Services Section  
Oregon Department of State Police  
107 Public Service Bldg.  
Salem, OR 97310

Maurice Foster  
Burlington Northern Railroad  
Telecommunications - Suite 250  
176 East Fifth Street  
St Paul, MN 55101

Larry S. Solomon  
GINSBERG, FELDMAN AND BRESS  
1250 Connecticut Avenue, N.W.  
Washington, D.C. 20036

William J. Byrnes  
Haley, Bader & Potts  
Suite 900  
4345 North Fairfax Drive  
Arlington, VA 22203-1633

Gerald Ishmael  
Telecommunication Services  
Public Service Company of Oklahoma  
212 East Sixth Street  
P.O. Box 201  
Tulsa, OK 74102-0201

  
Michael Mulcay